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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,642	12/15/2003	Erwin Van Zwet	081468-0307212	9080
909	7590	01/05/2006	EXAMINER	
PILLSBURY WINTHROP SHAW PITTMAN, LLP			NGUYEN, HUNG	
P.O. BOX 10500			ART UNIT	
MCLEAN, VA 22102			PAPER NUMBER	
			2851	

DATE MAILED: 01/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/734,642

Applicant(s)

ZWET ET AL.

Examiner

Hung Henry V. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/4/05; 8/25/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Prosecution Status

1. This action office is NON-Final rejection since the Examiner has applied new references to reject original claim 21.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 5, 11, 16-18, 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (U.S.Pat. 5,610,683) in view of Hwang et al (U.S.Pat. 6,185,085).

With respect to claims 1, 5, 11, 16-18 and 22-24, Takahashi discloses a lithographic apparatus comprising substantially all of the limitations of the instant claims such as: an illumination system (3) for providing a beam of radiation on a flat article (wafer) on an article support (12) in a beam path of the beam of radiation (see figure1); an article handler (11-3, 11-4) to move the article (wafer) during placement of the article on or removal of the article from the article support. Takahashi does not expressly disclose the article handle having an electrode and a dielectric layer for forming an electrostatic clamp for electrostatically clamping the article as recited in the instant claims. It is however noticed that a use of an electrostatic holding apparatus for transporting and/or attracting and fixing a wafer by means of electrostatic force is well known per se. For example, Hwang et al (figures 1-3) discloses an electrostatic handler (20) for transporting a semiconductor wafer (26) between a staging area and a processing station (see

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abstract). Hwang teaches the electrostatic handler (20) comprising two electrodes (42, 57) and a dielectric layer (44) for forming an electrostatic clamping for electrostatically clamping the article (26). In view of such teachings, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Takahashi and Hwang to obtain the invention as specified in the mentioned claims. It would have been obvious to a skilled artisan to employ the electrostatic handle as taught by Hwang into the lithographic apparatus of Takahashi for the purpose of moving the article/wafer during the placement of the article/wafer on or removal of the article/wafer from the article support as suggested by Hwang.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (U.S.Pat. 5,610,683) in view of Hwang et al (U.S.Pat. 6,185,085) in view of Blake et al (U.S.Pat. 5,436,790).

With respect to claims 4 and 21, Takahashi et al as modified by Hwang et al discloses substantially of the limitations of the instant claim as discussed except for a presence detector for detecting the presence of the article as recited in the instant claim. Blake et al discloses an electrostatic handler for handling an article and having a presence detector for detecting the presence of the article through a measured capacity formed on an electrode, and the dielectric

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layer of the handler (see col.5, lines 42-58). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Takahashi, Hwang and Blake et al to obtain the invention as specified in claims 4 and 21 of the present invention. It would have been obvious to a skilled artisan to employ the presence detector as taught by Blake et al into the article handler of Takahashi as modified by Hwang for the purpose of detecting the presence of the article on the handler and thus the status of the handle can be determined.

6. Claims 2-3, 6-10, 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (U.S.Pat. 5,610,683) in view of Hwang et al (U.S.Pat. 6,185,085) in view of Kitabayashi et al (U.S.Pat. 5,530,616).

With respect to claims 2-3, 6-10, 14, Takahashi as modified by Hwang et al discloses a lithographic apparatus comprising substantially all of the structures set forth in the instant claims except for the details of the article handler as recited in the instant claims. Kitabayashi et al teaches an electrostatic handler having all of the claimed limitations such as: an article handler (1) having at least three mutually distanced contact members (5) for contacting the articles (W), a dielectric layer (3) is provided with protrusions (5) to provide a gap between the dielectric layer (3) and the article (W) and the gap ranges between 0.1 and about 5 microns (see col.6, lines 33-35), the diameter of each of the protrusions is at most 3mm (see col.2, lines 43-44) and the electrostatic clamp is designed to provide a clamping pressure greater than about 1.10^4 Pa (see col.6, lines 50-51). Kitabayashi further teaches a metal pad bonded to the electrode in order to form a terminal for wiring and connecting the electrode to a power source. It would have been

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obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Kitabayashi, Takahashi and Hwang, to obtain the invention as specified in the instant claims. It would have been obvious to a skilled artisan to modify the article handler of Takahashi and Hwang as taught by Kitabayashi for the purpose of providing a proper electrostatic clamping force for transporting the article.

As to claims 8-10, 12-13, and 15, Takahashi as modified by Hwang and Kitabayashi lacks to show the material of the dielectric being at least of SiO₂ and SiN and the dielectric layer being less than 50 microns and a dielectric constant being greater than about 3, as well as, the metal pad formed of the electrode being an Al layer. Since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability of the intended use as a matter of obvious design choice. It would have been obvious to a skilled artisan at the time the invention was made to select thickness and material of the dielectric layer as specified in the instant claims for the purpose of providing a proper clamping pressure of the electrostatic handle.

Prior Art Made of Record

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Husain (U.S.Pat. 5,880,922); Mogi et al (U.S.Pat. 6,351,367) disclose electrostatic chucking devices for wafer transport and support. Collins et al (U.S.Pat. 5,315,473) teaches an electrostatic wafer transfer blade and Burkhart et al (U.S.Pat. 6,075,375) teaches article holders with sensors for detecting the presence and position of a wafer.

Response to Amendment/Argument

8. Applicant's amendment filed November 4, 2005 has been entered. Applicants have amended claims 1, 9 and 22 for overcoming the rejections under the applied references set forth in the previous office action. Applicant's arguments with respect to amended claims have been carefully considered but have been traversed in view of new ground of rejections as set forth above.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Henry V. Nguyen whose telephone number is 571-272-2124. The examiner can normally be reached on Monday-Friday (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

hvn
1/1/06



**HENRY HUNG NGUYEN
PRIMARY EXAMINER**

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